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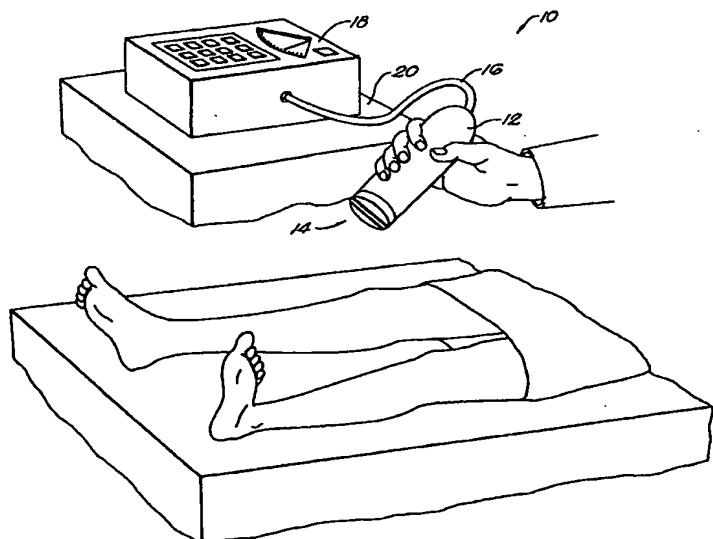
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(54) Title: HAIR FOLLICLE DEVITALIZATION BY INDUCED HEATING OF MAGNETICALLY SUSCEPTIBLE PARTICLES



(57) Abstract

Apparatus, methods, materials and systems for devitalizing hair follicles are disclosed in which magnetically susceptible particles are applied to a skin segment in a manner whereby the particles are deposited within the hair follicles and then subjected to a varying magnetic field to induce localized heating in the proximity of the particle, thereby devitalizing at least one component of the hair follicle to inhibit further hair growth.

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INTERNATIONAL SEARCH REPORT

Internat'l Application No
PCT/US 99/02166

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61N1/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61N A61F A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 400 940 A (LEVEEN HARRY H) 5 December 1990 (1990-12-05) column 10, line 5 - line 20 column 11, line 32 - line 37 column 15, line 4 - line 25; claim 1 column 20, line 6 - line 41; figures 26,27	1-6,35, 38,40,71
Y	---	7,8,39
X	FR 2 634 129 A (GRUP JUNE SCP) 19 January 1990 (1990-01-19) page 5, line 30 - page 6, line 23; figure 4	1,35,71
Y	---	7,8,39
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

18 May 1999

10.08.99

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT, US 99/02166

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 87 03798 A (MIRELL STUART G) 2 July 1987 (1987-07-02) page 8, line 20 - line 27; figure 1	1,35,71
A	---	17
A	US 5 197 940 A (SIEVERT CHESTER E ET AL) 30 March 1993 (1993-03-30) column 6, line 6 - line 12 column 9, line 4 - line 11 column 10, line 31 - line 61; figures 5,6	1,20,35, 40,71
A	EP 0 756 879 A (FRANCONI CAFIERO) 5 February 1997 (1997-02-05) abstract	18,76
A	US 5 569 237 A (BECKENSTEIN MICHAEL S) 29 October 1996 (1996-10-29) abstract	36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/02166

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 21-34 because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-20, 35-40, 71, 76

Remark on Protest

The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-20, 35-40, 71, 76

An improved magnetic field generator adapted to engage a region of skin

2. Claims: 41-70, 72-75

A composition comprising magnetic particles sufficiently small to penetrate the skin as well as means for handling the particles

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT, US 99/02166

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 0400940	A 05-12-1990	US 5099756 A		31-03-1992
		AU 643212 B		11-11-1993
		AU 5608390 A		06-12-1990
		CA 2017816 A,C		01-12-1990
		JP 3094772 A		19-04-1991
FR 2634129	A 19-01-1990	NONE		
WO 8703798	A 02-07-1987	US 4690130 A		01-09-1987
		EP 0252118 A		13-01-1988
US 5197940	A 30-03-1993	CA 2132730 A		09-06-1994
		WO 9412101 A		09-06-1994
		AU 3230593 A		22-06-1994
		EP 0632708 A		11-01-1994
EP 0756879	A 05-02-1997	IT RM950532 A		31-01-1997
US 5569237	A 29-10-1996	NONE		